ORIGINAL

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Part 15 of the Rules With Regard	)	RM-8435
to the Operation of Spread Spectrum	)	
Transmitters with Directional Antennas	)	

To: The Commission

MOTION TO ACCEPT LATE-FILED COMMENTS

WINDATA, Inc. ("WINDATA"), pursuant to 47 C.F.R. § 1.46, respectfully requests that the attached Comments be made a part of the record in this proceeding, even though they are being filed two days after the deadline established by the Commission.

As explained more fully in the attached Comments, WINDATA manufactures equipment that fully complies with the Commission's Rules, including the Rule which Western Multiplex Corp. ("Western Multiplex") seeks to have modified. The change proposed by Western Multiplex could detrimentally affect the users of this equipment, as well as users of other Part 15 devices. Accordingly, this proceeding holds great significance for WINDATA. Acceptance of these Comments will provide the Commission with a more complete record without prejudicing the interests of other parties in this proceeding.

For these reasons, WINDATA asks that the Commission grant this motion for late filing of its Comments.

Respectfully submitted,

WINDATA, INC.

By: 

Colin Lanzl
Director of Engineering

WINDATA, Inc.
10 Bearfoot Road
Northboro, Massachusetts 01532-1508
(508) 393-3330

No. of Copies rec'd 0+4
List ABCDE

March 22, 1994

ORIGINAL

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

DOCKET FILE COPY ORIGINAL

In the Matter of	)	
	)	
Amendment of Part 15 of the Rules With Regard to the Operation of Spread Spectrum Transmitters with Directional Antennas	)	RM-8435

To: The Commission

OPPOSITION OF WINDATA, INC.

WINDATA, Inc. ("WINDATA") hereby submits this opposition to the Petition for Rulemaking (the "Petition") filed January 5, 1994 by Western Multiplex Corp. ("Western Multiplex"), in which Western Multiplex requests that the Commission delete the second sentence of Section 15.247(b) in order to permit greater use of directional antennas with unlicensed spread spectrum transmitters.[1]

WINDATA is a developer and supplier of spread-spectrum data communications equipment that connects workgroup users together in a local area network ("LAN") within a building ("FreePort") and among buildings ("AirPort"). Since 1992, WINDATA has supplied spread spectrum equipment that conforms to *all* of the requirements of Section 15.247 — including the requirement that Western Multiplex now seeks to modify. Contrary to the assertions of Western Multiplex, the market demand for outdoor wireless LANs can be met with equipment that meets the requirements of Section 15.247. Moreover, modification of the Rules as requested by Western Multiplex would result in unacceptable interference to other users of the ISM band and inefficient use of the radio spectrum.

---

[1] Western Multiplex also requested an immediate waiver of Section 15.247(b) pending resolution of its Petition. In light of the interference threat posed by these devices and the public interest in not increasing the number of such devices that are sold to customers and placed into operation after the transition period cutoff date, WINDATA opposes this waiver request.

I. MODIFICATION OF THE EXISTING RULES IS NOT NECESSARY TO SATISFY CUSTOMER DEMAND.

WINDATA's AirPort product currently uses directional antennas to provide both point-to-point and point-to-multipoint service in a star configuration (a central hub radio serving one or more outlying remote radios). These directional antennas were selected to reduce interference with other nearby radio systems, to provide the capability of enhanced range, and to reduce some of the multipath echoes in dense, urban areas. WINDATA's outdoor antennas require line-of-sight conditions to provide unobstructed radio signal paths.

In addition, WINDATA has found that a significant segment of the market requires omnidirectional antennas for the hub element of the system, either because the remote units are semi-mobile or because the customer objects to the expense or difficulty of providing multipoint links with multiple hub antennas. WINDATA has developed, and is continuing to develop, equipment which will satisfy these needs while adhering to the requirements of Section 15.247.

Based upon its experience in providing spread spectrum communications products, WINDATA has concluded that, with the proper technology, it is possible to provide data communications services over ranges of up to 30 miles under the existing Rules.

Accordingly, WINDATA disagrees with Western Multiplex that modification of Section 15.247(b) is necessary to satisfy market needs. Equipment that meets the requirements of Section 15.247(b) is now being manufactured and sold, and will continue to be available after the June 23, 1994 end of the transition period. Such equipment satisfies a variety of point-to-point and point-to-multipoint applications and meets the demonstrated need for unlicensed, low cost outdoor data communications systems operating in the 2400-2483.5 MHz and 5725-5850 MHz bands. Therefore, the change proposed by Western Multiplex is not necessary to meet existing requirements without forcing users to switch to licensed devices, to permit the effective operation of spread spectrum systems in

outdoor applications, or to permit technological development and market growth.

II. ADOPTION OF THE CHANGE PROPOSED BY WESTERN MULTIPLEX COULD RESULT IN UNACCEPTABLE INTERFERENCE AND INEFFICIENT SPECTRUM USE.

If the Commission were to adopt the change proposed by Western Multiplex, manufacturers would be free to sell systems that operate with narrow beams, which could be pointed at buildings that will likely contain users of indoor Part 15 LAN equipment and/or other Part 15 devices. Especially in the 2400-2483.5 MHz and 5725-5850 MHz ISM bands, it would be simple for manufacturers to design and market antenna systems that could provide effective radiated powers a hundred-fold stronger than those allowed under the existing Rules. This is a substantial change to the conditions under which many indoor LAN systems and other Part 15 devices have been built to operate, and would very likely cause significant interference to existing equipment.

For example, a manufacturer could design a system with a one-watt transmitter and a 30 dB gain antenna, and with a narrow beam pointed at a building only a few thousand feet away. These conditions could effectively negate any attenuation that the outer building walls provide at the higher frequencies, and provide an interfering signal with significantly stronger effective power at receivers than the desired transmitter's signal.

The Commission adopted the existing Section 15.247(b) restriction to prevent exactly this sort of interference. As the Commission stated in its decision on the use of Part 15 spread spectrum systems, "We agree with the commenting parties that the increased risk of interference due to the use of high-gain directional antennas is a serious concern. Accordingly, we are limiting the use of directional antennas with these systems." Amendment of Parts 2 and 15 of the Rules with Regard to the Operation of Spread Spectrum Systems, 5 FCC Rcd 4123 at ¶ 30 (1990).

Western Multiplex has provided no data demonstrating that harmful interference would not occur. While it asserted that it is unaware

of any cases of harmful interference as a result of using directional antennas without the 6 dBW EIRP restriction, its devices are relatively new to the market and have been installed at a relatively small number of locations. Thus, the fact that there have been no reported cases of harmful interference to date does not mean that permanent authorization and widespread deployment of these devices would not result in unacceptable interference to other Part 15 devices.[2]

WINDATA also notes that the proposed new Rule would not prohibit the use of omnidirectional antennas with substantial gain. Under the existing Rule, any time an antenna with directional gain of 6 dBi or greater is used, it is subject to the restriction set forth in Section 15.247(b), whether the antenna is a directional antenna, as discussed by Western Multiplex, or an omnidirectional antenna. Although Western Multiplex focused solely on the purported benefits of high-gain directional antennas, its proposed change would permit the use of omnidirectional antennas that show as much as 12-15 dB of gain in azimuth in 2400-2483.5 MHz and 5725-5850 MHz ISM bands. An antenna of this sort fed from a one watt transmitter could have an effective radiated power of 15-30 watts radiating uniformly in azimuth. These sorts of systems could cause devastating interference to users in a broad geographic area, and would have a severely negative effect on spectrum re-use.

III. WESTERN MULTIPLEX'S PETITION IS INCONSISTENT WITH THE PURPOSE OF THE TRANSITION RULES AND WOULD HARM MANUFACTURERS AND USERS OF COMPLIANT DEVICES.

The transition rules were intended to ease the burden on manufacturers coming into compliance with the new Part 15 Rules, not to grandfather permanently equipment that the Commission concluded, after careful consideration, posed an unacceptable risk of interference to other users of the spectrum. For years, manufacturers of Part 15 devices have designed their equipment in the good faith belief that, after June of this year, all spread spectrum devices operating in the ISM bands would

---

[2] Moreover, given the unlicensed nature of these spread spectrum transmitters, it is not clear that Western Multiplex (or its customers) would have been informed of harmful interference experienced by another Part 15 user.

comply with the limits contained in Section 15.247(b). Moreover, manufacturers of new spread spectrum products have been subject to the new requirements for almost two years, and some manufacturers of existing products have achieved early compliance with the June, 1994, deadline rather than taking advantage of the full transition period.

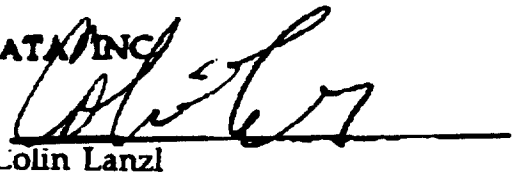
It would be inequitable to these manufacturers and users to modify the Rules in such a significant way at this very late date. Western Multiplex's Petition was filed nearly five years after the transition period began, and only six months before it is scheduled to end. It would be virtually impossible for the Commission to consider Western Multiplex's proposal adequately and resolve this matter before the June deadline. Yet if the Commission defers the June deadline, it creates a great deal of uncertainty for manufacturers and users — exactly the kind of uncertainty the transition period was originally intended to avoid. And if the Commission grants Western Multiplex's petition at this late date, it effectively penalizes manufacturers and users of devices that were designed in accordance with the Commission's rules, and that will now suffer interference that could not have been predicted. The Commission should not benefit manufacturers who have waited until the eleventh hour to come into compliance with regulations adopted in 1990 at the expense of manufacturers and users of compliant products, or permit development of a particular, unnecessary technology by stifling the development and use of other Part 15 devices.

CONCLUSION

For the foregoing reasons, WINDATA respectfully requests that the Commission deny the Petition of Western Multiplex Corp.

Respectfully submitted,

WINDATA, INC.

By: 

Colin Lanzl
Director of Engineering

WINDATA, Inc.
10 Bearfoot Road
Northboro, Massachusetts 01532-1508
(508) 393-3330

March 22, 1994

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copies of the foregoing Motion to Accept Late Comments and Opposition of WINDATA, Inc. were sent by first-class mail, postage prepaid, this 22nd day of March, 1994, to the following:

John Woods, President
Western Multiplex Corporation
300 Harbor Boulevard
Belmont, California 94002

Laurie A. Gray

/s/ Laurie A. Gray
Laurie A. Gray